ABSTRACT

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Title of diploma thesis: Biotransformation of selected anthelmintics in tapeworm *Hymenolepis diminuta*

Biotransformation enzymes of parasitic helminths are recently studied in the context of the increasing resistance of helminths to anthelmintics. Knowledge of parasite detoxification system may help to increase the success of helminthoses therapy. This thesis focuses on xenobiotic metabolism in the rat tapeworm (*Hymenolepis diminuta*). Infection of intermediate hosts - red flour beetle (*Tribolium castaneum*) and mealworm beetle (*Tenebrio molitor*), a choice of more appropriate intermediate host, infection of definitive host (rat) and isolation of tapeworms from its intestine, was also the part of the thesis. The main task was to study the biotransformation of anthelmintics and activity of oxidation, reduction and conjugation enzymes. The results of this study show that *H. diminuta* is able to reduce flubendazole and mebendazol, oxidation of albendazole was not proven *ex vivo*. *H. diminuta* is equipped with oxidative enzymes (superoxide dismutase, peroxidase, catalase), which protects it from exposure to the oxidants produced by the host. A high activity of carbonyl reducing enzymes and glutathione-S-transferase was proven during the experiment.